

THE FOLLOWING IS A LISTING OF THE CURRENTLY PENDING CLAIMS:

1-104 (Canceled)

105.(Original) A test tip device for a photometrical detector used for measuring a quantity of an analyte in a sample volume, the device comprising:

an optical fiber comprising at least one fiber, a first and second end and a first diameter along an entire length of said optical fiber, said first end receiving a light from the photometrical detector for transmission through said optical fiber to said second end;

a reagent pad comprising a flat membrane material impregnated with a dried reagent solution that comprises oxidase/peroxidase enzymes and optical properties that change with the quantity of the analyte, said flat membrane material formed in a circular shape with a second diameter matching said first diameter for substantially covering said second end while minimizing an area of said reagent pad, said reagent pad further comprising a first flat surface for contacting the sample volume and a second flat surface, wherein said minimized area of said reagent pad minimizes a size of the sample volume required for testing; and

means for bonding said second flat surface to said second end where said light impinges on said second flat surface and a reflected light, from said second flat surface, indicating changes in said optical properties is effectively returned through said optical fiber to the photometrical detector where the quantity of the analyte in the minimized size of the sample volume can be measured in vitro.

106.(Original) The device as recited in claim 105, wherein said first end is removably inserted into a detection slot of the photometrical detector and the test tip device is disposable.

107.(Original) The device as recited in claim 105, wherein said first and second ends are polished for efficiency of light conduction.

108.(Original) The device as recited in claim 105, wherein said change in optical properties is a color

change.

109.(Original) The device as recited in claim 105, wherein said flat membrane material further comprises a uniformly porous hydrophilic membrane.

110.(Canceled)

111.(Original) The device as recited in claim 105, wherein said reagent solution reacts to blood glucose and the quantity of the blood glucose in the minimized size of the sample volume is measured by the photometrical detector in an in vitro blood glucose self-monitoring system.

112.(Original) A test tip device for a photometrical detector used for measuring a quantity of an analyte in a sample volume, the device comprising:

a micro tube comprising a first open end, a second closed end and a first diameter along an entire length of said micro tube, said second closed end comprising an interior surface and an exterior surface wherein said first open end and said interior surface of said second closed end defines a cavity of said micro tube and said first open end and said exterior surface of said second closed end defines said entire length of said micro tube, said first open end receiving an optical probe from the photometrical detector where the optical probe passes through said cavity to said interior surface of said second end; a reagent pad comprising a flat membrane material impregnated with a dried reagent solution that comprises oxidase/peroxidase enzymes and optical properties that change with the quantity of the analyte, said flat membrane material formed in a circular shape with a second diameter matching said first diameter for substantially covering said second closed end while minimizing an area of said reagent pad, said reagent pad further comprising a first flat surface for contacting the sample volume and a second flat surface, wherein said minimized area of said reagent pad minimizes a size of the sample volume required for testing; and

means for bonding said second flat surface to said exterior surface of said second end where light from the optical probe impinges on said second flat surface and a reflected light, from said second flat surface, indicating changes in said optical properties is effectively returned through the optical probe

to the photometrical detector where the quantity of the analyte in the minimized size of the sample volume can be measured in vitro.

113.(Original) The device as recited in claim 112, wherein the optical probe is removably inserted into said first open end and the test tip device is disposable.

114.(Original) The device as recited in claim 112, wherein said change in optical properties is a color change.

115.(Original) The device as recited in claim 112, wherein said flat membrane material further comprises a uniformly porous hydrophilic membrane.

116.(Canceled)

117.(Original) The device as recited in claim 112, wherein said reagent solution reacts to blood glucose and the quantity of the blood glucose in the minimized size of the sample volume is measured by the photometrical detector in an in vitro blood glucose self-monitoring system.

118. (Original) An apparatus for a blood glucose self-monitoring system, the apparatus comprising:

a ball-point-pen shaped housing comprising an exterior surface and an opening at a bottom end;

a photometrical detector contained within an upper portion of said housing;

a display mounted on said surface for displaying measurement results;

an optical probe connected to said photometrical detector where in a first position said optical probe is contained within said housing to protect said optical probe from damage and in a second position a portion of said optical probe extends through said opening;

a button on a top of said housing for alternately moving said optical probe between said first and second positions when said button is depressed;

a clip attached to an upper portion of said housing for attachment to an article of clothing or other flat surface for securely transporting the apparatus;

a micro tube comprising a first open end, a second closed end and a first diameter along an entire length of said micro tube, said second closed end comprising an interior surface and an exterior surface wherein said first open end and said interior surface of said second closed end defines a cavity of said micro tube and said first open end and said exterior surface of said second closed end defines said entire length of said micro tube, said first open end receiving said optical probe when said optical probe is in said second position where said optical probe passes through said cavity to said interior surface of said second end;

a reagent pad comprising a flat membrane material impregnated with a dried reagent solution that comprises oxidase/peroxidase enzymes and optical properties that change with a quantity of glucose, said flat membrane material formed in a circular shape with a second diameter matching said first diameter for substantially covering said second end while minimizing an area of said reagent pad, said reagent pad further comprising a first flat surface for contacting a sample of blood and a second flat surface, wherein said minimized area of said reagent pad minimizes a volume of the sample of blood required for testing; and

means for bonding said second flat surface to said exterior surface of said second end where light from said optical probe impinges on said second flat surface and a reflected light, from said second flat surface, indicating changes in said optical properties is effectively returned through said optical probe to said photometrical detector where the quantity of the glucose in the minimized volume of the sample of blood can be measured in vitro.

119. (Original) The device as recited in claim 118, wherein said optical probe is removably inserted into said first open end and said micro tube is disposable.

120. (Original) The device as recited in claim 118, wherein said change in optical properties is a color change.

121. (Original) The device as recited in claim 118, wherein said flat membrane material further comprises a uniformly porous hydrophilic membrane.